

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Inventor(s):

David Alan Gage

Monopole Low Frequency Test
Woofers

Serial No. unassigned

Filed: herewith

Group Art Unit:

Examiner:

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Commissioner for Patents,
Washington, DC 20231



Name: John L. James

Registration No. 28,724

Date: April 11, 2001

Honorable Commissioner for Patents
Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

Prior to examination of the above-identified
application please enter the following amendment.

IN THE SPECIFICATION

On page 1 after the title of the invention
please add --

Cross-Reference To Related Applications

This application is a continuation of
application Serial No. 09/123,400 filed August 3,
1998, now abandoned.--

IN THE CLAIMS

Please cancel claims 4, 5, 10, 12, 13 and 17-
20, amend claims 1, 2 and 9, and add new claim 21 as
follows:

0982574-04401
10110-422880

1. (Amended) A monopole low frequency test woofer, comprising:

a rigid mounting plate having an acoustical opening;

a monopole driver having a high mass cone and low resonance in free air, said driver being mounted on said mounting plate with a basket of said driver fitting about said acoustical opening;

[an inductor connected in series with said monopole driver;] and

a rear tub attached to said mounting plate forming an enclosure housing said monopole driver so that sound radiates from said enclosure only through said acoustical opening [and inductor to an external circuit].

2. (Amended) A test woofer, as set forth in claim 1, including an inductor connected in series with said monopole driver, [wherein] said inductor [contours] contouring frequency response of said monopole driver to match frequency response of a vehicle dipole speaker over a frequency range of interest.

9. (Amended) A band limited radiating source, comprising:

a rigid mounting plate having an acoustical opening;

a monopole low frequency driver mounted on said mounting plate with a basket of said driver fitting about said acoustical opening;

an inductor connected in series with said monopole driver;

a tub sealed to said mounting plate forming an enclosure housing said monopole driver so that radiation propagates from said enclosure only through said acoustical opening; and

an electrical connector on said tub for connecting said monopole driver to an external circuit.

21. (New) A method for determining loss in baffling due to speaker environment in a vehicle being non-ideal, comprising the steps of:

- 5 mounting a monopole driver having a basket, a high mass cone and low resonance in free air on a mounting plate, said mounting plate having an acoustical opening, said basket of said driver fitting about said acoustical opening; sealing a tub to said mounting plate enclosing said driver so that sound radiates from said enclosure only
- 10 through said acoustical opening; attaching an electrical connector on said tub for connecting said monopole driver to an external circuit; measuring output of said test woofer in the vehicle; and
- 15 comparing said test woofer output with output of an optimized vehicle dipole speaker and determining frequency response difference which is the loss in baffling due to speaker environment in the vehicle.

REMARKS

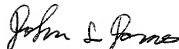
Consideration of the claims is respectfully requested. Claims 1 and 9 have been amended to more particularly define the invention. Claims 4-5, 10, 12-13 and 17-20 have been cancelled. New claim 21 has been added. Claims 1, 9 and 21 are the only independent claims in the application. Claims 1-3, 6-9, 11, 14-16 and 21 are presented for consideration.

Claims 1 and 9 have been amended to more clearly recite that the cover plate and tub form an enclosure and that sound radiates from the enclosure only through an acoustical opening in the cover plate. New claim 21 also recites that sound radiates from the enclosure only through an acoustical opening in the cover plate. The present invention is different from the prior art which has vents or air gaps forming sound paths that create the very problem solved by the present invention. That problem is the out of phase relationship between sound emanating from the front of

the speaker cone and rear of the cone being out of phase
tending to cancel each other at lower frequencies.

It is believed that the claims in the
application are allowable and that the application is
in condition for allowance.

Respectfully submitted,



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DOCKET 197-1291CON
Preliminary Amendment
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101140-4252860

1. (Amended) A monopole low frequency test
woofer, comprising:

a rigid mounting plate having an acoustical opening;

5 a monopole driver having a high mass cone and low resonance in free air, said driver being mounted on said mounting plate with a basket of said driver fitting about said acoustical opening; and

10 a rear tub attached to said mounting plate forming
an enclosure housing said monopole driver so that sound
radiates from said enclosure only through said acoustical
opening.

2. (Amended) A test woofer, as set forth in
15 claim 1, including an inductor connected in series with
said monopole driver, said inductor contouring frequency
response of said monopole driver to match frequency
response of a vehicle dipole speaker over a frequency
range of interest.

3. A test woofer, as set forth in claim 1, wherein the frequency range of interest is from about 40 Hz to about 200 Hz.

6. A test woofer, as set forth in claim 1, wherein a top portion of a rear panel of said rear tub is offset inward toward said mounting plate to have lesser depth than a bottom portion of said rear tub to thereby form a slot.

7. A test woofer, as set forth in claim 6,
wherein said electrical connector is positioned in said
slot.

8. A test woofer, as set forth in claim 7, wherein said electrical connector is flush with said lower portion of said rear panel.

9. (Amended) A band limited radiating source, comprising:

a rigid mounting plate having an acoustical opening;

5 a monopole low frequency driver mounted on said mounting plate with a basket of said driver fitting about said acoustical opening;

an inductor connected in series with said monopole driver;

10 a tub sealed to said mounting plate forming an enclosure housing said monopole driver so that radiation propagates from said enclosure only through said acoustical opening; and

an electrical connector on said tub for connecting
15 said monopole driver to an external circuit.

11. A band limited radiating source, as set forth in claim 9, wherein said monopole driver has a frequency response range of about 40 Hz to about 200 Hz.

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14. A band limited radiating source, as set forth in claim 9, wherein a top portion of a rear panel of said rear tub is offset inward toward said mounting plate to have lesser depth than a bottom portion of said rear tub
25 to thereby forma slot.

15. A band limited radiating source, as set forth in claim 14, wherein said electrical connector is positioned in said slot.

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16. A band limited radiating source, as set forth in claim 15, wherein said electrical connector is flush with said lower portion of said rear panel.

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21. (New) A method for determining loss in baffling due to speaker environment in a vehicle being non-ideal, comprising the steps of:

- mounting a monopole driver having a basket, a high
5 mass cone and low resonance in free air on a mounting plate, said mounting plate having an acoustical opening, said basket of said driver fitting about said acoustical opening;
- sealing a tub to said mounting plate enclosing
10 said driver so that sound radiates from said enclosure only through said acoustical opening;
- attaching an electrical connector on said tub for connecting said monopole driver to an external circuit;
- measuring output of said test woofer in the
15 vehicle; and
- comparing said test woofer output with output of an optimized vehicle dipole speaker and determining frequency response difference which is the loss in baffling due to speaker environment in the vehicle.

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